What is claimed is:

1. A process for producing a microstructured tool insert for injection molding a part, said part being fabricated of a synthetic material, a metal or a ceramic material and having an arrangement of microchannels and an arrangement of through-going orifices, each such orifice extending in a substantially perpendicular manner with respect to an outer surface of the part, said process comprising:

(a) photo-lithographically masking the front side of a first wafer with a first etching mask which corresponds to the arrangement of microchannels,

(b) microstructuring the front side of the first wafer by means of plasma etching to form the arrangement of microchannels on the front side of the wafer,

(c) removing the first etching mask from the front side of the first wafer,

(d) photo-lithographically masking the rear side of the first wafer with a second etching mask which corresponds to the arrangement of through-going orifices,

(e) microstructuring the rear side of the first wafer by means of plasma etching to form said arrangement of through-going orifices,

(f) removing the second etching mask from the rear side of the first wafer,

(g) bonding the rear side of the first wafer to a carrier substrate to form a master,

(h) applying an electrically conductive thin layer to the microstructured front side of the first wafer and to the carrier substrate surfaces which can be accessed through the through-going channels mentioned,

(i) electrochemically depositing a metal layer on the front side of the first wafer and in the through-going orifices which are present therein, wherein the deposited metal layer reaches a depth which is greater than the depth of the microchannels on the front side of the first wafer,

(j) making planar the outer surface of the deposited metal layer, and

(k) separating the metal layer from the master, wherein the separated metal layer can be used as a tool insert for injection molding a part and has integrated in the metal layer piercing punches, each such punch having a shape and dimensions defined by the shape and dimensions of a corresponding one of the through-going orifices provided in the first wafer.

2. The process of claim 1 wherein the first wafer is a silicon wafer.

3. The process as claimed in claim 1 wherein the carrier substrate is a glass wafer.

4. The process as claimed in claim 1 wherein the carrier substrate is a silicon wafer.

5. The process of claim 1, wherein the deposited metal layer is a nickel layer.

6. The process of claim 1 wherein the deposited metal layer is strong and hard.

7. A process for injection molding a part fabricated of a synthetic material, a metal or a ceramic material and which comprises an arrangement of microchannels, and which further comprises an arrangement of through-going orifices, each such orifice extending in a substantially perpendicular manner with respect to an outer surface of the part, and wherein a tool is used for the injection molding process which is formed from a first and a second tool half, said process comprising:

(a) installing a first tool insert as a first tool half which serves to shape the arrangement of microchannels, wherein the first tool insert is produced according to a process of photo-lithographically masking the front side of a first wafer with a first etching mask which corresponds to the arrangement of microchannels, microstructuring the front side of the first wafer by means of plasma etching so as to form the arrangement of microchannels, removing the first etching mask from the front side of the first wafer, photo-lithographically masking the rear side of the first wafer with a second etching mask which corresponds to an arrangement of through-going orifices, microstructuring the rear side of the first wafer by means of plasma etching to form the arrangement of through-going orifices, which extend in a substantially perpendicular manner with respect to the front side of the first wafer, removing the second etching mask from the rear side of the first wafer, bonding the rear side of the first wafer to a carrier substrate to form a master, applying an electrically conductive thin layer to the microstructured front side of the first wafer and to the carrier substrate surfaces which can be accessed through the through-going channels mentioned, electrochemically depositing a metal layer on the front side of the first wafer and in the through-going orifices which are present therein, wherein the deposited metal layer reaches a depth which is greater than the depth of the microchannels on the front side of the first wafer, making planar the outer surface of the deposited metal layer, and separating the metal layer from the master, and has a first arrangement of piercing punches integrated in the first tool insert, each such piercing punch corresponding to an associated one of the through-going orifices,

(b) installing a second tool insert as a second tool half which is arranged opposite the first tool half, wherein the second tool insert has a second arrangement of piercing punches which push on a corresponding piercing punch of the first arrangement in each case as the tool for the injection molding is closed,

(c) closing the tool for injection molding formed from the first and second tool insert,

(d) injecting a material melt into the cavity between the first and the second tool insert,

(e) cooling the injected material melt, and

(f) ejecting from the tool for injection molding a part which is formed by the setting of the injected material melt and which part comprises an arrangement of through-going orifices which are formed during the injection molding process by the piercing punches on the first and second tool half pushing against each other.

8. A process for producing a predetermined portion of a mold for molding a part, said part having at least one microchannel and at least one through-going orifice, said process comprising:

(a) forming said microchannel on a front side of a wafer,

(b) forming said through-going orifice on a rear side of the wafer,

(c) attaching the wafer to a carrier substrate with the rear side of the wafer being adjacent to the carrier substrate,

(d) depositing a metal layer on the wafer that fills said microchannel and said through-going orifice, and

(e) separating the metal layer from the master.

9. The process of claim 8 wherein forming said microchannel includes masking the front side of the wafer with a first etching mask which corresponds to the microchannel.

10. The process of claim 9 wherein forming the microchannel includes etching the front side of the wafer after masking this side with the first etching mask.

11. The process of claim 10 wherein the etching is plasma etching.

12. The process of claim 8 wherein forming of said through-going orifice includes masking the rear side of the wafer with a second etching mask which corresponds to the through-going orifice.

13. The process of claim 12 wherein forming the through-going orifice includes etching the rear side of the wafer after masking of this side with the second etching mask.

14. The process of claim 13 wherein the etching is plasma etching.

15. The process of claim 8 wherein the depositing of the metal layer includes applying an electrically conductive thin layer to the front side of the wafer and to the carrier substrate surfaces followed by electrochemically depositing a metal layer on the front side of the first wafer and in the through-going orifice.

16. A process for molding a part which comprises at least one microchannel, and which further comprises at least one through-going orifice, and wherein a mold is used for the molding process, said process comprising the steps of:

(a) installing a first tool insert into a first mold half which serves to shape the microchannel and the through-going orifice, wherein the first tool insert is produced according to a process comprising the steps of forming said microchannel on a front side of a wafer, forming said through-going orifice on a rear side of the wafer, bonding the wafer to a carrier substrate with the rear side of the wafer being adjacent to the carrier substrate, depositing a metal layer on the wafer that fills said microchannel and the said through-going orifice and separating the metal layer from the master

(b) installing a second mold half which is arranged opposite the first mold half,

(c) closing the mold by abutting the first and second mold half,

(d) injecting a material into the mold,

(e) cooling the injected material, and

(f) ejecting the part from the mold.